

Model 7280 Series

Precision Potentiometer



Features:

- Lead-free
- RoHS 2 compliant
- 7/8" diameter
- 10 turn wirewound

Applications:

- Pedal position
- Joystick controls
- Valve control
- Wind vane
- Panel control
- Test and measurement
- Medical equipment
- Angular position

Model Styles Available

| | |
|---|--------------------------|
| 7281 | 1/8" shaft, 1/4" bushing |
| 7283 | 1/8" shaft, servo |
| 7284 | 6 mm shaft, 3/8" bushing |
| 7286 | 1/4" shaft, 3/8" bushing |
| 7288 (for heavy side load applications) | 1/4" shaft, 3/8" bushing |

Electrical

| | |
|---|--|
| Resistance range | 100 to 100K ohms |
| Standard resistance tolerance | ±5% |
| Minimum practical resistance tolerance | ±1% |
| Independent linearity | ±0.25% |
| Minimum practical independent linearity | ±0.15% (<300 ohms), ±0.075% (≥300 ohms) |
| Power rating | 2.0 Watts at 70°C, derating to 0 at 125°C |
| Dielectric strength | 1,000 V rms |
| Insulation resistance | 1,000 Megohms minimum |
| Noise | 100 ohms maximum |
| Actual electrical travel | 3600° +10° -0° (>100 ohms), 3600° +10° -5° (≤100 ohms) |
| End voltage | Maximum 0.25% of input voltage |
| Tap tolerance | ±3° |

General Note
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413 Rood RD, Suite 7
Calexico, CA 92231
Ph: +1 714 447 2345
www.ttelectronics.com/bi-technologies

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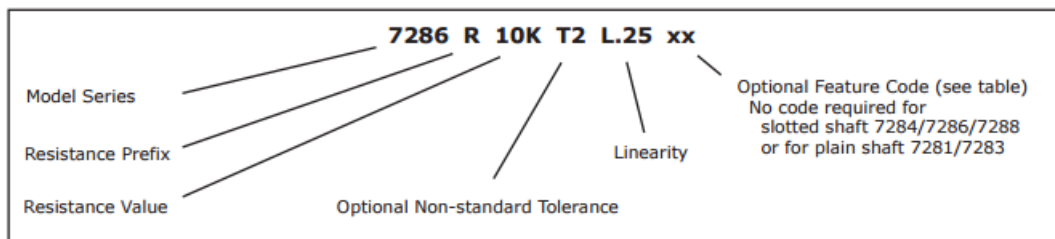
Mechanical

| | | |
|---|-------------------------------|-------------|
| Total mechanical travel | 3600° +15° -0° | |
| Number of gangs | 2 maximum | |
| Weight (single gang) | 0.75 oz. nominal | |
| Backlash | 1° maximum | |
| | 7281, 7284, 7286, 7288 | 7283 |
| Static stop strength | Maximum 48 oz.-in. | 36 oz.-in. |
| Panel nut tightening torque | Maximum 25 lb.-in. | n/a |
| Shaft end play | Maximum 0.010" | 0.005" |
| Shaft runout | Maximum T.I.R. 0.003" | 0.002" |
| Pilot diameter runout | Maximum T.I.R. 0.004" | 0.002" |
| Lateral runout | Maximum T.I.R. 0.005" | 0.004" |
| Shaft radial play | Maximum 0.003" | 0.002" |
| Start/run torque (per gang, ES option adds 0.5 oz.-in.) | Maximum 0.8 oz.-in. | 0.6 oz.-in. |

Environmental

| | | |
|--|---|--|
| Operating temperature range | -40°C to +125°C dynamic, -55°C to +125°C static | |
| Temperature cycling | 5 cycles, -55°C to +125°C, maximum 5% ΔR | |
| Shock | 6 ms saw-tooth, 100 G's, 0.1 ms maximum discontinuity | |
| Vibration | 15 G's, 10 to 2,000 Hz, maximum 5% ΔR, 0.1 ms maximum discontinuity | |
| Moisture resistance | Five 24 hour cycles, maximum 3% ΔR | |
| High temperature exposure | 1,000 hours at 125°C, maximum 5% ΔR | |
| Rotational load life (1 lb side load for 7288) | 1M shaft revolutions + 900 hours at 2.0 Watts & 70°C, maximum 5% ΔR | |
| Ingress protection rating (IP Code) | IP50, IP66 available as option (feature code ES) | |

Ordering Information



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Feature Codes

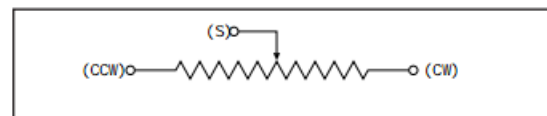
| | |
|---|---------|
| 7281, 7283 plain shaft; 7284, 7286, 7288 slotted shaft | No code |
| Center tap | CT |
| Linearity tape | LT |
| Flatted shaft | FS |
| Slotted shaft (standard on single cup 7284, 7286 & 7288 without RS feature) | SS |
| Rear shaft extension (7281, 7286, 7288 single cup only) | RS |
| Shaft lock (7286 & 7288 only) | SL |
| High torque 2-6 oz.-in. (7286 & 7288 only) | HT |
| Additional gang | 2G |
| Gold plated solder lug terminals (see optional terminal configuration) | FT |
| Seal (IP66) 7284, 7286, or 7288 only | ES |

When multiple feature codes are used the P/N shall be in the same sequence as listed in this table (top to bottom).

Standard Resistance Values

| Total Resistance (Ohms) | Theoretical Resolution (% nominal) | Tempco of Wire (ppm/°C) |
|-------------------------|------------------------------------|-------------------------|
| 100 | 0.059 | ±20 |
| 200 | 0.037 | ±20 |
| 500 | 0.030 | ±20 |
| 1K | 0.024 | ±20 |
| 2K | 0.020 | ±20 |
| 5K | 0.018 | ±20 |
| 10K | 0.017 | ±20 |
| 20K | 0.016 | ±20 |
| 50K | 0.010 | ±20 |
| 100K | 0.008 | ±20 |

Circuit Diagram



Feature Codes

7281: RBJ, 2601, 2641

7286, 7288: RB, 2126, 2606, 2606S, 2607, 2607S, 2626, 2627, 2646, 2646S, 2647, 2647S

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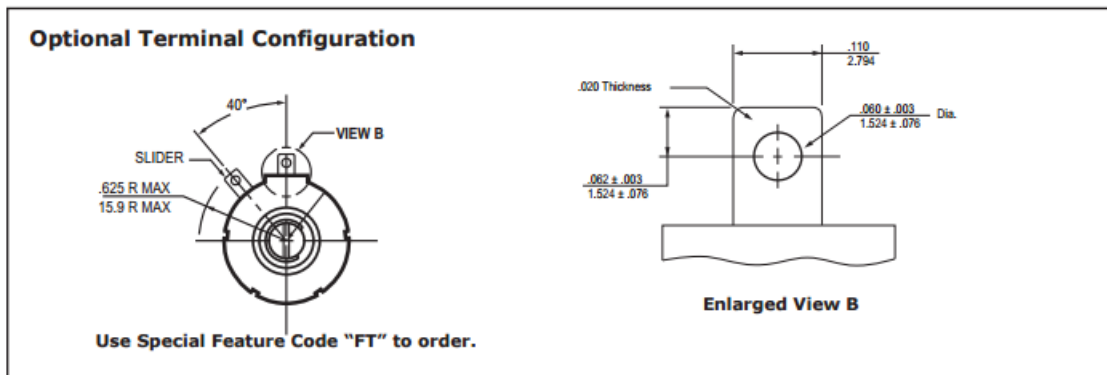
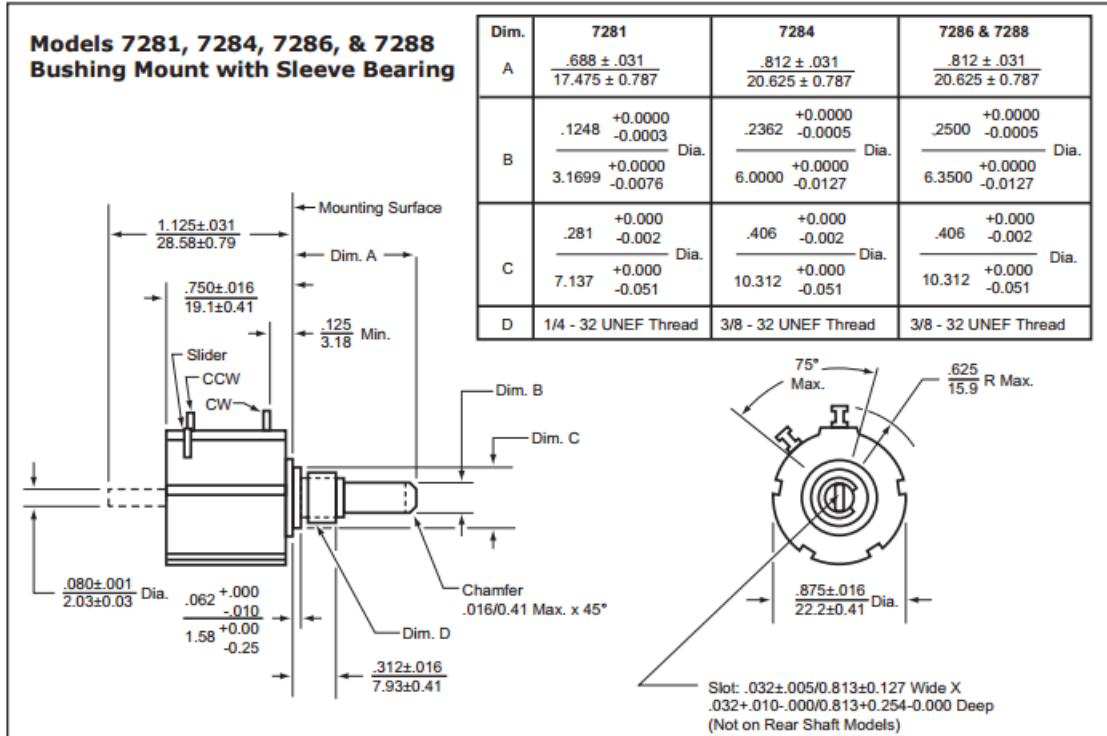
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Outline Drawing



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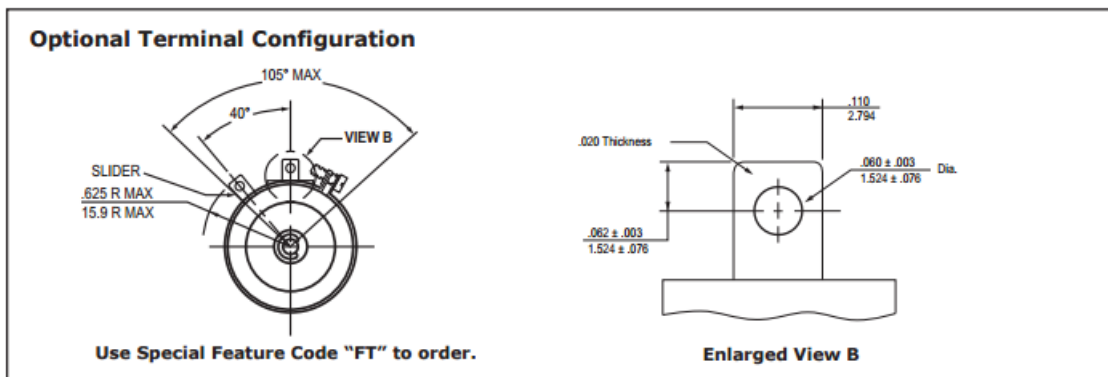
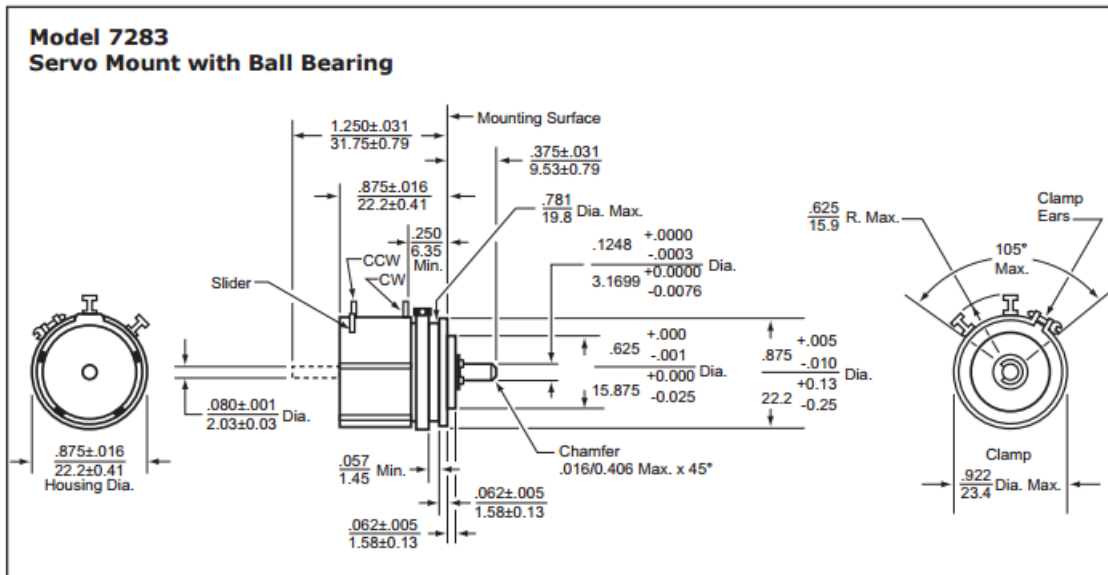
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